Amendments to the Specification:

Please add the following paragraph prior to paragraph [0001]:

[0000.1] This application is a continuation-in-part of co-pending application S.N. 10/356,347 filed January 31, 2003 by Bruno P.B. Lequesne, Avoki M. Omekanda and Thaddeus Schroeder, which was published on August 5, 2004 as Publication Number US2004/0150393 A1.

Please replace paragraph [0025] with the following paragraph:

[0025] Example configurations for the target are shown in Figs. 3A and 3B. Figure 3A shows two configurations that will result in a peak, in addition to the familiar target comprising the magnetic strip 20 in the non-magnetic block 24. The target shown at the top of Fig. [[3]] 3A comprises a magnetic tooth 21 extending toward the array 12 from an integral magnetic mount, here a block. At the bottom of Fig. [[3,]] 3A the target is a narrow magnet 23 movably mounted above the array 12. In this embodiment, the array 12 is mounted upon a magnetic base 25. Any target that results in a peak is generically referred to herein as a magnetic tooth. Two configurations for a target that will produce a valley when the target is in the presence of the array 12 are shown in Fig. 3B. At the top of Fig. 3B, a magnetic slot 22 is located in a magnetic mount, block 26. The target at the bottom of Fig. 3B is a slot 27 extending from a nonmagnetic mount, where two magnetic strips or blocks 29 embedded in the nonmagnetic mount form the slot 27. Any target that results in a valley is generically referred to herein as a magnetic slot.

Please replace paragraph [0030] with the following paragraph:

[0030] Of course, other processing circuitry known to those of skill in the art can be used to excite a magnetic element and to measure a resulting magnetic flux density. For example, Fig. 5 shows processing circuitry 40 that can be used when the linear array 12 comprises a plurality of sensing elements 14 in the form of magnetoresistive (MR) elements. Like in Fig. 4, there are n sensing elements 14,

labeled MR_0, MR_1, . . . MR_i, . . . MR_{n-1}. Excitation of the sensing elements 14 can be performed by any number of circuit designs. In this embodiment, excitation is performed by one or more current sources 42. Each sensing element 14 is connected to a current source 42 by a lead.

Please replace paragraph [0043] with the following paragraph:

[0043] Figures 8A-8C ~~shows~~ show the linear array 12 being used in an angular position sensor 10b. The sensor 10b measures the rotational angle of a rotating shaft 31 in, for example, a motor. A spiral magnetic tooth or slot forms the target. Here, the target is a spiral magnetic strip 52 mounted on an annular non-magnetic disk 54. Of course, other target configurations using an annular mount are possible. The disk 54 is fixedly mounted to the shaft 31 such that the disk 54 rotates with the shaft 31 about a rotational axis 28. The linear array 12 is fixedly mounted adjacent the disk 54 so that the sensing elements 14 face the spiral target 52. For example, in a motor, the linear array 12 can be mounted on the stator according to known methods. As the disk 54 rotates, the spiral target 52 transverses the linear array 12. Each location of the spiral target 52 along the length of the linear array 12 corresponds to a unique angle of rotation such that:

Please replace paragraph [0045] with the following paragraph:

[0045] The range of movement of the spiral target 52 is equal to R-r. Preferably, then, the length of the linear array 12 is designed so that it is slightly longer than the range (R-r) such that the spiral target 52 travels from about the midpoint between the first and second sensing elements 14, array element numbers 0 and 1, and about the midpoint between the last two sensing elements 14, array element numbers n-2 and n-1, wherein n is the number of sensing elements 14. The processing circuitry, such as that shown in Figs. 4 and 5, generates a linear function of the angle α. It can also compute and output, in addition to the angle β, any desired function or functions of the angle β required in particular applications, e.g., sin β,

[[cos β.]] <u>cos β,</u> sin 3β, etc. A graph of the magnetic image resulting from the angular sensor of Figs. 8A-8C is similar to that shown in Figs. 2 and 6.